

Appl. No. 09/997,347  
Amdt. Dated May 9, 2005  
Reply to Office action of January 7, 2005

### REMARKS

Favorable reconsideration of this application is requested in the light of the amendments and the following discussion. Applicant has amended claims 23, 24, 26, 28, 34 and 35. No new matter has been added. Thus, claims 23-38 remain pending in the application.

#### Effectiveness of 37 CFR 1.131 Declaration

The Examiner has indicated that the declaration submitted by applicant under 37 CFR 1.131 is ineffective to overcome the Hartig reference (US2003/0024180). As support for her position, the Examiner discusses the criteria necessary for a proper showing of conception of an invention, particularly with regard to the claimed range of wavelengths of UV light (100-200 nm) which may be utilized. Applicant respectfully disagrees with the position taken by the Examiner.

Applicant asserts that the position of the Examiner is contrary to established law, and is not the correct legal standard to be applied. The CCPA, in *In re Stempel*, 241 F.2d 755, 113 USPQ 77 (CCPA, 1957), stated that:

We are convinced that under the law all the applicant can be required to show is priority with respect to so much of the claimed invention as the references [sic] happens to show. When he has done that, he has disposed of the references...

Appl. No. 09/997,347  
Amdt. Dated May 9, 2005  
Reply to Office action of January 7, 2005

In the case of a reference, it is fundamental that it is valid only for what it discloses and if the applicant establishes priority with respect to that disclosure, and there is no statutory bar, it is of no effect at all...

The rule [1.131] must be construed in accordance with the rights given to inventors by statute and this excludes a construction permitting the further use of a reference as a ground for rejection after all pertinent subject matter in it has been antedated to the satisfaction of the patent office [113 USPQ at 81.]

This case establishes that the key factor of a 131 declaration is the removal of the prior art reference. The fact that the subsequent application contains subject matter broader than that shown in the declaration and in its supporting evidence is not an issue in the court's decision, and in fact, is specifically excluded. Therefore, the Examiner's applied standard of law related to reduction to practice is submitted to be erroneous, and an analysis of the applied reference, in light of the correct standard of law, is submitted herein below.

It is respectfully submitted that the Hartig reference establishes *at most* the mere fact of the benefits of edge deletion of coatings.

Applicant reiterates the previous argument that the Hartig reference does not once mention the use of UV light to remove any of the types of coatings referred to in the Hartig reference. The Examiner has previously posited that Hartig allows the use of any method of removing a coating. Applicant submits that the Hartig reference cannot be interpreted so broadly as has been done by the Examiner, as it clearly teaches into

Appl. No. 09/997,347  
Amdt. Dated May 9, 2005  
Reply to Office action of January 7, 2005

the scope of the prior art as to methods of coating removal. Further, under the Examiner's rationale no one in the future would be able to patent an aspect of coating removal, as it could be considered anticipated by, or obvious over, the Hartig reference.

This outcome is clearly not consistent with existing law. Therefore, it is respectfully submitted that the applicant's declaration under §1.131 ***fully antedates the disclosure of the Hartig reference relative to use of UV light to selectively remove a hydrophobic coating.***

In view of the decisions of the CAFC in Stempel, the only requirement for removing a reference is showing that the antedating evidence fully anticipates the disclosure of the reference. The antedating disclosure does not need to fully disclose the subject matter later claimed, but instead needs to show the same scope as that disclosed by the applied reference. As is detailed above, the §1.131 declaration does, in fact, fully show all of the disclosure present in the Hartig reference, thus this reference has been removed as an effective reference, and is not applicable against the present claims, even claims drawn to a greater scope than that disclosed by the antedating disclosure. Therefore, it is respectfully submitted that the Hartig reference has been removed by the 1.131 declaration, and all of the claims of the present application are allowable.

The rationale of the Stempel decision should in applicant's opinion be applied to the use of the invention of the present application in respect of a vehicle glazing. It is

Appl. No. 09/997,347  
Amdt. Dated May 9, 2005  
Reply to Office action of January 7, 2005

absolutely clear that the essence of the present invention is directed to vehicle glazings.

It is not necessary that such emphasis be made again in the context of the §1.131 declaration. Similarly, applicant submits that it is not necessary that the makeup of the hydrophobic coating which is set out in the application be repeated in the §1.131 declaration to effectively overcome the Hartig reference as Hartig only discloses hydrophobic coatings in a very general context. Notwithstanding the foregoing, applicant submits herewith a supplemental declaration under §1.131 relating to applicant's intention prior to February 8, 2001 to use the present invention with vehicle glazings.

#### Sufficiency of 37 CFR 1.132 Declaration

The Examiner has indicated the above-captioned declaration is insufficient to overcome the rejection of claims 23-33 based upon 35 USC 112, first paragraph as, in the Examiner's opinion, U.S. Patent No. 5,424,130 to Nakanishi et al. discloses a hydrophobic coating on both surfaces of a vehicle window, contrary to applicant's contention that one skilled in the art would understand that a hydrophobic coating would be applied only to the exterior surface of a vehicle window.

Applicant has carefully studied the Nakanishi et al. reference, and respectfully disagrees with the Examiner's characterization thereof.

Appl. No. 09/997,347  
Amdt. Dated May 9, 2005  
Reply to Office action of January 7, 2005

While it is true that the Examples discussed in Nakanishi et al. have coatings on two surfaces, applicant submits that one skilled in the art would recognize that the reason for this result is the method by which the coating was applied, namely dip coating, or immersion of the glass substrate to be coated. A careful reading of the Background, the Summary of the Invention and the claims, all indicate that the invention is directed to a glass substrate bearing a hydrophobic coating on a major surface of the substrate. There is no indication that the second coating adds anything to the properties of the product produced. The main objective of the invention is to produce a hydrophobic coating with increased durability. Logic would tell a reasonable person that a hydrophobic coating of increased durability on the interior of a vehicle window would be "gilding the lily."

The Examiner has also indicated the declaration filed by applicant under 37 CFR 1.132 is insufficient to overcome the rejection of claim 23 based on U.S. Patent No. 4,543,283 to Curtze et al.

Applicant's statement in paragraph 8 of the §1.132 declaration was not meant to imply any "modification" of the Curtze reference. Applicant's statement was meant to refute the position taken by the Examiner that one skilled in the art would be motivated to utilize a hydrophobic coating on either the interior or the exterior of a vehicle window, so that applicant's amendment to claim 23 did not distinguish over the Curtze reference. For all the reasons stated in applicant's responses to previous Office

Appl. No. 09/997,347  
Amdt. Dated May 9, 2005  
Reply to Office action of January 7, 2005

Actions, and for the reasons stated in the preceding paragraphs herein, applicant still strongly holds the opinion that the Curtze reference does not disclose the invention of the present application.

Applicant further notes the language of the Hartig et al. reference itself, which repeatedly refers to "exterior" coatings. By way of example, applicant would draw the Examiner's attention to page 3, paragraph 0042, lines 3-4, page 4, paragraph 0048, lines 1-3, page 4, paragraph 0049, lines 1-4, and in particular, page 4, paragraph 0047 which constitutes the only substantive, albeit very general, discussion of hydrophobic coatings in the Hartig et al. reference. Hartig et al. in paragraph 0047 clearly contemplates a hydrophobic coating being used on an exterior surface of e.g., an automobile windshield.

Thus, while invalid itself as a reference against the present application, Hartig et al. reinforces applicant's contention that one skilled in the art would understand a hydrophobic coating to be utilized on the exterior of a vehicle glazing.

Claim Rejections – 35 USC §112, first paragraph.

The Examiner has rejected claims 23-38 under 35 USC §112, first paragraph as failing to comply the written description requirement. More specifically, the Examiner states that support does not exist in the specification for:

Claim 23      the hydrophobic coating being on the exterior surface of  
the vehicle glazing.

Claim 26      water contact equal to 100°, before irradiation irradiating the  
vehicle glazing for 0-5 seconds, water contact angle being equal to  
30° after irradiation.

Applicant has amended claims 23 and 26 to bring them more clearly into compliance with the requirements of 35 USC § 112, first paragraph. In addition to Applicant's previous comments regarding placement of hydrophobic coatings, applicant directs the Examiner's attention to the attached report which was partially funded by applicant, and conducted by the well-respected Transportation Research Institute at the University of Michigan. In particular, applicant would draw the Examiner's attention to page 1, paragraphs 1 and 4, page 4, page 5, paragraphs 2 and 3, page 6, paragraph 2 and page 16, paragraph 4. In applicant's opinion the description of the functioning of a hydrophobic coating by application to the exterior surface of a vehicle windshield, exposure of that exterior surface to simulated rainfall and wind velocity to test the effects of the hydrophobic coating on driver visual acuity and thus driver performance, confirms applicant's position that this is what one skilled in the art would understand to be the typical use and functioning of a hydrophobic coating for use on a vehicle. There is no suggestion that application of a hydrophobic coating on the interior surface of a

Appl. No. 09/997,347  
Amdt. Dated May 9, 2005  
Reply to Office action of January 7, 2005

vehicle windshield would be useful, or indeed, that it was considered. The hydrophobic coating functions as a result of the combination of water droplets, e.g., rain falling on the exterior surface of the windshield, beading up, and being driven off by the velocity of air moving over the windshield when the vehicle is in motion. None of this could occur if the hydrophobic coating was placed on the interior surface of the vehicle windshield. Applicant further notes that the subject report is dated July 1997, well before the date of the present application, and thus available to those skilled in the art.

Favorable reconsideration of claims 23-38 is respectfully requested in view of the above responses to the issues raised by the Examiner.

Claim Rejections – 35 USC §112, second paragraph.

The Examiner has rejected claims 23-38 under 35 USC §112, second paragraph, for failure to particularly point out and distinctly claim the subject matter of the present invention. In particular, the Examiner has indicated the following deficiencies:

- Claim 23      insufficient antecedent basis for “the vehicle” in line 5.
- Claim 34      clarification of limitation in lines 1-5 and 9-10, insufficient antecedent basis for “the source” in line 6.



Applicant has amended claims 23 and 34 to meet the requirements of 37 CFR §112, second paragraph. Favorable reconsideration of claims 23-38 is respectfully requested.

Claim Rejections 35 – 35 USC §103.

The Examiner has rejected one or more of claims 23-38 under at least 22 combinations of references. In no instance has the Examiner relied on combining less than 3 references as a basis for rejecting such claims. More often, 4-6 references are combined to support those rejections. Applicant and applicant's representative find it well nigh impossible to formulate a coherent response to such a deluge of bases for rejection. This Office Action is several times longer than the application which it is critiquing.

Nonetheless, applicant has studied the cited references, and offers the following:

1. Hartig et al. – not believed to be a proper reference applicable to the present application; contains no suggestion of use of UV light to remove coatings.
2. Tweadey et al. – purpose is to prevent corrosion of metal-based coatings.

Applicant further notes that the Tweadey et al. reference, as well as, several of the other references cited by the Examiner refer to excimer lasers rather than excimer lamps. One skilled in the art would recognize that an excimer laser is significantly different from an excimer lamp, in that the intensity of the light emitted is much greater

with the laser than with the excimer lamp. Thus, the mechanism by which the laser works is likewise different than with the excimer lamp. In the case of the present invention, it is likely that with the high temperatures generated by the intensity of the laser light, the coating would be simply burned off, whereas, with the lamp, the temperatures generated are much lower and the excimer lamp desirably relies on selectively breaking chemical bonds, rather than simply destroying the coating altogether. Applicant submits that one skilled in the art would thus not be motivated to choose a laser for the purpose of the present invention, nor would an excimer lamp be appropriate for many purposes for which a laser might be used. Applicant notes that excimer lasers are also much more expensive than excimer lamps, and so would limit the feasibility of using a laser in a production process as is envisioned with the method of the present invention.

3. Volkmann et al. – discloses method of pretreatment of substrate. Such pretreatment is said to form projections in surface of substrate to enhance adhesive bonding says nothing about removing a coating. The comments regarding the differences between excimer lasers and excimer lamps presented with regard to the Tweadey et al. reference are also applicable, applicant submits, with respect to the Volkmann et al. reference.

4. Curtze et al. – discloses laceration shield on interior of e.g., a vehicle windshield.

5. Kizaki et al. – discloses use of a source of UV light for “dry cleaning” or treating the surface of a substrate, and a control system for same. No mention is made of removing a previously, intentionally deposited coating.

6. Vander Putten et al. – discloses a method of providing a metal pattern on a glass substrate in an electroless process without using photo-resist layers and organic solvents. As part of the process, a silane layer is removed by irradiation with actinic radiation by an ArF excimer laser, an oxygen plasma, or preferably a UV ozone treatment. The method also requires use of a palladium (Pd) sol, as Pd particles stabilized with water-soluble polymers do not absorb on glass surfaces.

7. Anderson et al. – discloses a coating stack, primarily designed to have excellent anti-reflective properties. Also mentioned is a glazing having other layers which may impart other properties to the coated glass, such as hydrophobicity. No mention of removing such coating, or using UV light to do so.

8. Yoshinori et al. – believed to disclose a method of partially removing a functional coating. Part of the coating is protected (~~masked?~~) to avoid exposure to UV light. The portion of the coating which is exposed is broken down to generate ozone which is utilized in a later film removal step. The reference is not readily

understandable, however ozone generation is not part of the method of the present invention.

9. Franz et al. – discloses a method for making ~~and~~ a glass article having a durable, water-repellent (non-wetting) surface. Coated glass exhibits high water contact angle. No mention of removing coating or using UV light to do so.

10. Teranishi et al. – a method of forming a variable thickness water-repellent coating on a glass substrate, the variable thickness occurring in a so-called boundary region, and leaving an uncoated region, as well. No mention of removing coating or using UV light to do so.

Applicant appreciates the Examiner's comprehensive study of the present application. Given the myriad combination of references, however, application respectfully submits that the Examiner has resorted to hindsight in her detailed analysis of the present application. The need to combine three, four, five, or even six references to reject applicant's claims clearly indicates as much. In an effort to advance prosecution of the application, and to address the Examiner's primary concerns applicant has attempted to summarize her main arguments.

First, applicant would again draw the Examiner's attention to page 1, paragraph 2, of the specification, which discusses the safety benefits of hydrophobic coatings on a vehicle window when contacted by water. Applicant submits that, logically, the only way such a benefit could accrue is for the hydrophobic coating to be on the surface of the

Appl. No. 09/997,347  
Amdt. Dated May 9, 2005  
Reply to Office action of January 7, 2005

window "exposed to the exterior of the vehicle," where it is contacted by rainfall, road spray, snow and the like, and is quickly shed by the hydrophobic coating to improve the driver's vision through such window. Also, please see the attached July 1997 report on hydrophobic coatings prepared by the University of Michigan Transportation Research Institute.

Secondly, applicant believes it is clear that the Curtze reference is directed to a structure intended to be placed on the surface of a vehicle window exposed to the interior of a vehicle, i.e., the passenger compartment. This location is necessary for the invention of the Curtze reference to fulfill its function as an anti-laceration, anti-ejection shield. The coating noted by the Examiner as having the composition of a hydrophobic coating is present, applicant submits, as an anti-abrasion coating to minimize scratching of the interior surface during cleaning rather than for any purpose related to possible hydrophobic properties.

One skilled in the art would further recognize that a structure such as is disclosed in the Curtze reference would not be durable enough to withstand the abrasive effects of windshield wipers, snow scrapers and the like to which a structure on an exterior surface would be exposed.

With regard to the Tweadey et al. reference, one skilled in the art would recognize that the purpose of the invention of the Tweadey et al. reference is to provide "a reliable effective and efficient method of improving the environmental durability of

Appl. No. 09/997,347  
Amdt. Dated May 9, 2005  
Reply to Office action of January 7, 2005

laminated glazing units having metal-based transparent, electrically conductive film stacks for solar load reduction and/or electrical heating in view of their potential for edge corrosion resulting from prolonged exposure to certain environmental conditions.”  
(Tweadey, col. 3, lines 43-49) (emphasis added).

One skilled in the art would understand that hydrophobic coatings are not metal-based, and are therefore not susceptible to corrosion upon exposure to “certain environmental conditions.” To the contrary, hydrophobic coatings are intended to be exposed to the environment and must be in order to fulfill their water-shedding purpose. Therefore, one skilled in the art would not be motivated to use the disclosure of Tweadey et al. to remove non-metal based, non-corrosive coatings from a glass substrate.

The Hartig et al reference, although believed to be ineffective as a proper reference in view of the previously submitted Declaration under 35 CFR §1.131 and the Supplemental Declaration under 35 CFR §1.131 submitted herewith, is primarily directed to edge deletion of coatings, preferably photo-catalytic coatings, in order to improve adhesion of coated glass to a seal/framework that comprise additional components of an insulated glass assembly. The subject published application makes reference to other types of coatings which might be removed but makes only passing reference to methods of edge deletion which might be utilized besides by mechanical grinding, which is preferred. Apart from the “catch-all” phrase “using any other desired

Appl. No. 09/997,347  
Amdt. Dated May 9, 2005  
Reply to Office action of January 7, 2005

coating-removal process”, the only methods of edge deletion mentioned are grinding, torches and electrical discharge. There is no mention of using short wavelength UV light as a method for removing coatings of any sort.

With respect to Volkmann, Kizaki, Vander Putten, Anderson, Yoshinori, Franz and Teranishi, and combinations thereof, applicant notes that claims 23-38 recite irradiating hydrophobic coatings on an area of a surface of a vehicle glazing (see, page 2, line 23 to page 3, line 2) with UV radiation preferably having a dominant wavelength in the range of 100-200 nm (see, for example, page 2, lines 21-22), thus removing the coatings. The hydrophobic coatings referred to herein cause water which comes into contact with the coating on an exterior surface of a vehicle glazing to bead readily and run off quickly so as not to obscure the outward vision of the occupants of the vehicle (Background; page 1, lines 10-18).

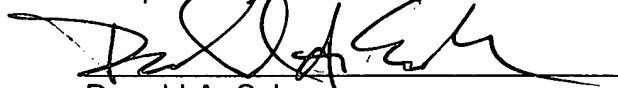
After carefully studying the cited references, the applicant can find nowhere in one or proper combinations of such cited references where at least the above-stated limitations (irradiating hydrophobic coatings on an exterior surface of a vehicle glazing with radiation in the range of 100-200 nm), then adhering an item to an area of an exterior surface of a vehicle glazing (claims 23-33) or utilizing electro-mechanical means to provide relative movement between a source of UV radiation and a hydrophobic coating (claims 34-38) are taught or suggested.

Appl. No. 09/997,347  
Amdt. Dated May 9, 2005  
Reply to Office action of January 7, 2005

Therefore, applicant respectfully submits that claims 23-38 of the present application are patentable over the cited references as the inventions defined thereby are not suggested therein, nor is there any suggestion or motivation to modify or combine these references' teachings in order to teach or suggest the claimed limitations, as required by 35 USC §103. Consequently, the applicant respectfully submits that claims 23-38 of the present application are patentable over such cited references and that claims 23-38 should be allowed thereover. Accordingly, favorable consideration of claims 23-38 is respectfully requested.

In view of the above, it is submitted that claims 23-38 are in condition for allowance, and an action towards that end is respectfully requested. Should the Examiner wish to modify the application in any way, applicant's attorney suggests a telephone interview in order to expedite the prosecution of the application.

Respectfully submitted,



Donald A. Schurr  
Registration No. 34,247

ATTORNEYS

Marshall & Melhorn, LLC  
Four SeaGate – 8<sup>th</sup> Floor  
Toledo, Ohio 43604  
Phone: (419) 249-7145  
Fax: (419) 249-7151